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<!--StartFragment-->RESULT 4
AAQ28389
ID   AAQ28389 standard; DNA; 2907 BP.
XX
AC   AAQ28389;
XX
DT   27-AUG-2003 (revised)
DT   25-MAR-2003 (revised)
DT   12-FEB-1993 (first entry)
XX
DE   Gene from the ALS mutant of Arabidopsis.
XX
KW   Herbicide resistant; acetolactate synthase; ALS; sulphonylurea;
KW   triazolopyrimidinesulphonamide; imidazolinone; markers; ss.
XX
OS   Arabidopsis thaliana.
XX
FH   Key Location/Qualifiers
FT   CDS 506..2518
FT   /*tag= a
XX
PN   US5141870-A.
XX
PD   25-AUG-1992.
XX
PF   18-JAN-1991; 91US-00642976.
XX
PR   26-AUG-1986; 86US-00900609.
PR   04-MAR-1988; 88US-00164360.
XX
PA   (DUPO ) DU PONT DE NEMOURS & CO E I.
XX
PI   Bedbrook JR, Chaleff RS, Falco SC, Mazur BJ, Somerville CR;
PI   Yadav NS;
XX
DR   WPI; 1992-307863/37.
DR   P-PSDB; AAR26913.
XX
PT   Conferring herbicide resistance on plants - using a nucleic acid fragment
PT   encoding a herbicide-resistant plant aceto:lactate synthase protein.
XX
PS   Disclosure; Fig 10; 63pp; English.
XX
CC   The DNA sequence is that of a mutant acetolactate synthetase gene
CC   isolated from herbicide resistant strains of Arabidopsis thaliana.
CC   designated GH50. The GH50 mutant ALS gene may be isolated from
CC   Arabidopsis plants resistant to sulphonylurea, triazolopyrimidine
CC   sulphonamide and imidazolinone herbicides. The gene may be used to
CC   transform plants to confer herbicide resistance to plants such as
CC   tobacco, petunia, cotton, sugarbeet, potato, tomato, lettuce, sunflower,
CC   soybean, corn, wheat, rice, poplars, alfalfa, oats, etc. The herbicide
CC   resistant ALS genes can also be used as markers for transformation of an
CC   organism by a second DNA fragment. See also AAQ28387-8. (Updated on 25-
CC   MAR-2003 to correct PF field.) (Updated on 27-AUG-2003 to correct OS
CC   field.)
XX
SQ   Sequence 2907 BP; 757 A; 610 C; 636 G; 904 T; 0 U; 0 Other;

Query Match 50.8%; Score 2903.8; DB 2; Length 2907;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 2905; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

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Qy	1979	GCTCTTAGTTTTGTTATGTGTTTTGTAGCCAAATCTCCATTCTTATTCATTTCACATT	2038
Db	1	GCTCTTAGTTTTGTTATGTGTTTTGTAGCCAAATCTCCATTCTTATTCATTTCACATT	60
Qy	2039	ATCTCTTGTTCCCTTATAGACCTTATAAGTTTTTTTATTTCATGTATACAAATTATATTGTCA	2098
Db	61	ATCTCTTGTTCCCTTATAGACCTTATAAGTTTTTTTATTTCATGTATACAAATTATATTGTCA	120
Qy	2099	TCAAGAAGTATCTTTAAAAATCTAAATCTCAAAATCACCAGGACTATGTTTTTGTCCAAATC	2158
Db	121	TCAAGAAGTATCTTTAAAAATCTAAATCTCAAAATCACCAGGACTATGTTTTTGTCCAAATC	180
Qy	2159	GTGGAACCAACTTGCAGCTTGTATCCATTCTCTTAACCAATAAAAAAGAAAGAGATC	2218
Db	181	GTGGAACCAACTTGCAGCTTGTATCCATTCTCTTAACCAATAAAAAAGAAAGAGATC	240
Qy	2219	AATTTGATAAAATTTCTCAGCCACAAATCTACATTTAGGTTTTAGCATATCGAAGGCTCA	2278
Db	241	AATTTGATAAAATTTCTCAGCCACAAATCTACATTTAGGTTTTAGCATATCGAAGGCTCA	300
Qy	2279	ATCACAAATACAATAGATAGACTAGAGATTCCAGCGTCACGTGAGTTTTATCTATAAATA	2338
Db	301	ATCACAAATACAATAGATAGACTAGAGATTCCAGCGTCACGTGAGTTTTATCTATAAATA	360
Qy	2339	AAGGACCAAAAATCAAAATCCCGAGGGCATTTCGTAATCCAACATAAAACCCCTTAAACTT	2398
Db	361	AAGGACCAAAAATCAAAATCCCGAGGGCATTTCGTAATCCAACATAAAACCCCTTAAACTT	420
Qy	2399	CAAGTCTCATTTTAAACAAATCATGTTACAAGTCTCTTCTTCTCTGTTTCTCTAT	2458
Db	421	CAAGTCTCATTTTAAACAAATCATGTTACAAGTCTCTTCTTCTCTGTTTCTCTAT	480
Qy	2459	CTCTTGCTCATCTTTCTCTGAACCATGGCGGCGCAACAACAACAACAACATCTTC	2518
Db	481	CTCTTGCTCATCTTTCTCTGAACCATGGCGGCGCAACAACAACAACAACATCTTC	540
Qy	2519	TTCGATCTCCTTCTCCACCAAAACCATCTCCTTCTCTCTCCAATCACCATTACCAATCTC	2578
Db	541	TTCGATCTCCTTCTCCACCAAAACCATCTCCTTCTCTCTCCAATCACCATTACCAATCTC	600
Qy	2579	CAGATTCTCCCTCCCATTCTCCCTAAACCCCAACAAATCATCTCCTCTCCCGCGCGCG	2638
Db	601	CAGATTCTCCCTCCCATTCTCCCTAAACCCCAACAAATCATCTCCTCTCCCGCGCGCG	660
Qy	2639	CGGTATCAAAATCCAGCTCTCCTCTCCATCTCCGCGGTGCTCAACACAACCAACATGT	2698
Db	661	CGGTATCAAAATCCAGCTCTCCTCTCCATCTCCGCGGTGCTCAACACAACCAACATGT	720
Qy	2699	CACAACCACTCCCTCTCCAACCAAACTACCAAAACCGGAACATTATCTCCCGATTTCG	2758
Db	721	CACAACCACTCCCTCTCCAACCAAACTACCAAAACCGGAACATTATCTCCCGATTTCG	780
Qy	2759	TCCAGATCAACCCCGCAAGGCGCTGATATCTCTCGTGAAGCTTTAGAAGCTCAAGGCGT	2818
Db	781	TCCAGATCAACCCCGCAAGGCGCTGATATCTCTCGTGAAGCTTTAGAAGCTCAAGGCGT	840
Qy	2819	AGAAACCGTATTTCGCTTACCCTGGAGGTGCATCAATGGAGATTACCAAGCCTTAACCCG	2878
Db	841	AGAAACCGTATTTCGCTTACCCTGGAGGTGCATCAATGGAGATTACCAAGCCTTAACCCG	900

Qy	2879	CTCTTCCTCAATCCGTAACGTCCTTCTCTCGTCACGAACAAGGAGGTGATTTCGCAGCAGA	2938
Db	901	CTCTTCCTCAATCCGTAACGTCCTTCTCTCGTCACGAACAAGGAGGTGATTTCGCAGCAGA	960
Qy	2939	AGGATACGCTCGATCCTCAGGTAACACAGGTATCTGTATAGCCACTTCAGGTCCCGGAGC	2998
Db	961	AGGATACGCTCGATCCTCAGGTAACACAGGTATCTGTATAGCCACTTCAGGTCCCGGAGC	1020
Qy	2999	TACAAATCTCGTTAGCGGATTAGCCGATGCGTTGTTAGATAGTGTCTCTTGTAGCAAT	3058
Db	1021	TACAAATCTCGTTAGCGGATTAGCCGATGCGTTGTTAGATAGTGTCTCTTGTAGCAAT	1080
Qy	3059	CACAGGACAAGTCCCTCGTCGTATGATTGGTACAGATGCGTTTCAAGAGACTCCGATTGT	3118
Db	1081	CACAGGACAAGTCTCTCGTCGTATGATTGGTACAGATGCGTTTCAAGAGACTCCGATTGT	1140
Qy	3119	TGAGGTAACGCGTTCGATTACGAAGCATAACTATCTTGTGATGGATGTTGAAGATATCCC	3178
Db	1141	TGAGGTAACGCGTTCGATTACGAAGCATAACTATCTTGTGATGGATGTTGAAGATATCCC	1200
Qy	3179	TAGGATTATTGAGGAAGCTTTCTTTTAGCTACTTCTGGTAGACCTGGACCTGTTTGGT	3238
Db	1201	TAGGATTATTGAGGAAGCTTTCTTTTAGCTACTTCTGGTAGACCTGGACCTGTTTGGT	1260
Qy	3239	TGATGTTCTCTAAAGATATTCAACAACAGCTTGCGATTCCCTAATTGGGAACAGGCTATGAG	3298
Db	1261	TGATGTTCTCTAAAGATATTCAACAACAGCTTGCGATTCCCTAATTGGGAACAGGCTATGAG	1320
Qy	3299	ATTACCTGGTTATATGTCTAGGATGCCTAAACCTCCGGAAGATTCTCATTGGAGCAGAT	3358
Db	1321	ATTACCTGGTTATATGTCTAGGATGCCTAAACCTCCGGAAGATTCTCATTGGAGCAGAT	1380
Qy	3359	TGTTAGGTTGATTTCTGAGTCTAAGAAGCCTGTGTTGTATGTTGGTGGTGGTTGTTGAA	3418
Db	1381	TGTTAGGTTGATTTCTGAGTCTAAGAAGCCTGTGTTGTATGTTGGTGGTGGTTGTTGAA	1440
Qy	3419	TTCTAGCGATGAATTGGGTAGGTTTGTGAGCTTACGGGGATCCCTGTTGCGAGTACGTT	3478
Db	1441	TTCTAGCGATGAATTGGGTAGGTTTGTGAGCTTACGGGGATCCCTGTTGCGAGTACGTT	1500
Qy	3479	GATGGGGCTGGGATCTTATCCTTGTGATGATGAGTTGTCGTTACATATGCTTGAATGCA	3538
Db	1501	GATGGGGCTGGGATCTTATCCTTGTGATGATGAGTTGTCGTTACATATGCTTGAATGCA	1560
Qy	3539	TGGGACTGTGTATGCAAAATTACGCTGTGGAGCATAGTATTGTTGTTGGCGTTTGGGGT	3598
Db	1561	TGGGACTGTGTATGCAAAATTACGCTGTGGAGCATAGTATTGTTGTTGGCGTTTGGGGT	1620
Qy	3599	AAGGTTTGATGATCGTGTACGGGTAAGCTTGAGGCTTTTGCTAGTAGGGCTAAGATTGT	3658
Db	1621	AAGGTTTGATGATCGTGTACGGGTAAGCTTGAGGCTTTTGCTAGTAGGGCTAAGATTGT	1680
Qy	3659	TCATATTGATATTGACTCGGCTGAGATTGGGAAGAATAAGACTCCTCATGTGCTGTGTG	3718
Db	1681	TCATATTGATATTGACTCGGCTGAGATTGGGAAGAATAAGACTCCTCATGTGCTGTGTG	1740
Qy	3719	TGGTGATGTTAAGCTGGCTTTGCAAGGGATGAATAAGGTTCTTGAGAACCGAGCGGAGGA	3778
Db	1741	TGGTGATGTTAAGCTGGCTTTGCAAGGGATGAATAAGGTTCTTGAGAACCGAGCGGAGGA	1800
Qy	3779	GCTTAAGCTTGATTTTGGAGTTTGGAGGAATGAGTTGAACGTACAGAAACAGAAGTTTCC	3838

Db	1801	 GCTTAAGCTTGTATTTGGAGTTTGGAGGAATGAGTTGAACGTACAGAAACAGAAGTTTCC	1860
Qy	3839	 GTTGAGCTTTAAGACGTTTGGGGAAGCTATTCCCTCCACAGTATGCGATTAAAGTCCTTGA	3898
Db	1861	 GTTGAGCTTTAAGACGTTTGGGGAAGCTATTCCCTCCACAGTATGCGATTAAAGTCCTTGA	1920
Qy	3899	 TGAGTTGACTGATGGAAAAAGCCATAATAAGTACTGGTGTGCGGCAACATCAAATGTGGGC	3958
Db	1921	 TGAGTTGACTGATGGAAAAAGCCATAATAAGTACTGGTGTGCGGCAACATCAAATGTGGGC	1980
Qy	3959	 GGCGCAGTTCTACAATTACAAGAAACCAAGGCAGTGGCTATCATCAGGAGGCCCTTGGAGC	4018
Db	1981	 GGCGCAGTTCTACAATTACAAGAAACCAAGGCAGTGGCTATCATCAGGAGGCCCTTGGAGC	2040
Qy	4019	 TATGGGATTGGACTTCCTGCTGCGATTGGAGCGCTGTTGCTAACCCGTATGCGATAGT	4078
Db	2041	 TATGGGATTGGACTTCCTGCTGCGATTGGAGCGCTGTTGCTAACCCGTATGCGATAGT	2100
Qy	4079	 TGTGGATATTGACGGAGATGGAAGCTTTATAATGAATGTGCAAGAGCTAGCCACTATTTCG	4138
Db	2101	 TGTGGATATTGACGGAGATGGAAGCTTTATAATGAATGTGCAAGAGCTAGCCACTATTTCG	2160
Qy	4139	 TGTAGAGAACTTCCAGTGAAGGTACTTTTATTAACAACCCAGCATCTTGGCATGGTTAT	4198
Db	2161	 TGTAGAGAACTTCCAGTGAAGGTACTTTTATTAACAACCCAGCATCTTGGCATGGTTAT	2220
Qy	4199	 GCAATGGGAAGATCGGTTCTACAAAGCTAACCGAGCTCACACATTCTCGGGGATCCGGC	4258
Db	2221	 GCAATGGGAAGATCGGTTCTACAAAGCTAACCGAGCTCACACATTCTCGGGGATCCGGC	2280
Qy	4259	 TCAGGAGGACGAGATATTCCCGAACATGTTGCTGTTTGCGAGCAGTTGCGGGATTCCAGC	4318
Db	2281	 TCAGGAGGACGAGATATTCCCGAACATGTTGCTGTTTGCGAGCAGTTGCGGGATTCCAGC	2340
Qy	4319	 GGCGAGGGTGACAAAGAAAGCAGATCTCCGAGAAGCTATTAGACAATGCTGGATACACC	4378
Db	2341	 GGCGAGGGTGACAAAGAAAGCAGATCTCCGAGAAGCTATTAGACAATGCTGGATACACC	2400
Qy	4379	 AGGACCTTACCTGTTGGATGTGATTGTGTCGCCACCAAGAACATGTTGCCGATGATCCC	4438
Db	2401	 AGGACCTTACCTGTTGGATGTGATTGTGTCGCCACCAAGAACATGTTGCCGATGATCCC	2460
Qy	4439	 GAATGGTGGCACTTTCAACGATGTCATAACCGAAGGAGATGGCCGGATTAAATACTGAGA	4498
Db	2461	 GAGTGGTGGCACTTTCAACGATGTCATAACCGAAGGAGATGGCCGGATTAAATACTGAGA	2520
Qy	4499	 GATGAAACCGGTGATTATCAGAACCTTTTATGGTCTTTGTATGCATATGGTAAAAAACT	4558
Db	2521	 GATGAAACCGGTGATTATCAGAACCTTTTATGGTCTTTGTATGCATATGGTAAAAAACT	2580
Qy	4559	 TAGTTTGACAATTTCCCTGTTTGTGTTTGGTAATTTGAGTTCTTTTAGTTGTTGATCTGCCT	4618
Db	2581	 TAGTTTGACAATTTCCCTGTTTGTGTTTGGTAATTTGAGTTCTTTTAGTTGTTGATCTGCCT	2640
Qy	4619	 GCTTTTTGGTTTACGTCAGACTACTACTGCTGTTGTTGTTTGGTTTCCCTTCTTTCATTT	4678
Db	2641	 GCTTTTTGGTTTACGTCAGACTACTACTGCTGTTGTTGTTTGGTTTCCCTTCTTTCATTT	2700
Qy	4679	 TATAAATAAATAATCCGGTTCGGTTTACTCCTTGTGACTGGCTCAGTTGGTTATTGCGA	4738

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Db      2701 TATAAATAAATAATCCGGTTCGGTTTACTCCTTGTGACTGGCTCAGTTTGGTTATTGCGA 2760
Qy      4739 AATGCGAATGGTAAATTGAGTAATTGAAATTCGTTATTAGGTTCTAAGCTGTTTTAACA 4798
      |||
Db      2761 AATGCGAATGGTAAATTGAGTAATTGAAATTCGTTATTAGGTTCTAAGCTGTTTTAACA 2820
Qy      4799 GTCAC TGGGTTAATATCTCTCGAATCTTGCATGGAAAATGCTCTTACCATTGGTTTTTAA 4858
      |||
Db      2821 GTCAC TGGGTTAATATCTCTCGAATCTTGCATGGAAAATGCTCTTACCATTGGTTTTTAA 2880
Qy      4859 TTGAAATGTGCTCATATGGGCCGTGGT 4885
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Db      2881 TTGAAATGTGCTCATATGGGCCGTGGT 2907
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